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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KLAUS FROHLICH

Appeal No. 2007-1586
Application No. 10/709,513
Technology Center 3600

Decided: March 24, 2008

Before WILLIAM F. PATE, III, LINDA E. HORNER and ANTON W. FETTING, *Administrative Patent Judges.*

PATE, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-5 and 7-12. The rejection of claim 6 was withdrawn by the Examiner in the Answer (Page 2). These are the only claims in the application. We have jurisdiction under 35 U.S.C. §§ 134 and 6.

The claimed invention is directed to a joint for connecting the ends of concrete reinforcing bars (rebar). The joint consist of a pipe section for receiving the ends

of the rebar and clamping elements which comprise threaded fasteners. The clamping elements are arranged in the pipe section in staggered fashion relative to the longitudinal direction of the pipe section.

Claim 1, reproduced below, is further illustrative of the claimed subject matter.

1. A device for connecting bar ends, the device comprising:
a pipe section for receiving bar ends of bars to be connected;
clamping elements each having an outer thread;
wherein the pipe section has threaded bores in which the clamping elements are secured by being screwed in;
wherein the clamping elements are arranged in a first row and a second row on the same side of the pipe section relative to a circumference of the pipe section;
wherein the clamping elements of the first row are staggered relative to the clamping elements of the second row in a longitudinal direction of the pipe section.

The references of record relied upon by the examiner as evidence of obviousness are:

Hope	4,666,326	May 19, 1987
Mochizuki	5,974,761	Nov. 2, 1999
Holdsworth	5,909,980	Jun. 8, 1999
Michelson	6,139,550	Oct. 31, 2000

Claims 1-5 and 7-9 stand rejected under 35 U.S.C. § 103 as unpatentable over Holdsworth in view of Michelson.

Claim 10 stands rejected under 35 U.S.C. § 103 as unpatentable over Holdsworth in view of Michelson and further in view of Hope.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103 as unpatentable over Holdsworth in view of Michelson and further in view of Mochizuki.

FINDINGS OF FACT

Holdsworth discloses a tubular coupler for concrete reinforcing bars. The coupler is adapted to be installed in the field without the need for presses or special equipment. See col. 2, ll. 15-16. The invention is comprised of a sleeve or softer coupler body 12 in the form of a pipe section. See col. 3, ll. 54-58. Clamping elements in the form of set screws 42 are provided in transverse threaded bores in the pipe section. See col. 4, ll. 17-26. Holdsworth differs from the claimed invention in that the clamping elements 42 are in a straight line on the upper side of the pipe section.

Michelson discloses a skeletal plating system. This *in vivo* skeletal plating system is for aligning and maintaining bones in position. See col. 1, ll. 14-18. While disclosing many embodiments, the plating system is generally comprised of a locking plate 2 with holes 6, 8 for receipt of paired bones screws the heads of which are locked in position by screws or rivets inserted in countersunk holes 12, 14. See, generally, cols. 13 and 14 of the Michelson patent. Note that the screw holes 6 and 8 are staggered with respect to the longitudinal center line of the plate. Michelson refers to this as a crossing screw plating system. The system is described starting at line 65 of column 3 and continuing through column 4, line 25. According to Michelson, the cross orientation of the screws within the bone provides a more secure engagement of the plate to the bone to which it is applied because longer screws may be used, and because an area of bone is wedged and trapped between the screws as compared to plates which do not allow paired screws to cross. Michelson differs from the claimed subject matter in that the screws of Michelson do not clamp the outer surface of the bone but instead penetrate the bone and trap material from the center of the bone between the staggered screws.

According to the Examiner, Michelson discloses evidence of a recognition in the art of providing staggered rows for a secure engagement of a cylindrical object *per se*. Answer page 4, ll. 19-20. Thus, the Examiner is not relying so much on the penetration aspect of Michelson as upon the engineering principle of providing multiple fasteners in a staggered second row without increasing the length of the connector where increasing strength is generated by the distribution of stresses applied to the bar by the screw rows. According to the Examiner, Michelson provides evidence of such an engineering principle. Answer page 5, ll. 1-7.

The Examiner has cited Hope to show the use of a clamping screw 12 diametrically across from a first clamping element 11. The Examiner has cited Mochizuki to show a hole 33 and transverse pin 34 used in a splice sleeve for reinforcing bars.

PRINCIPLES OF LAW

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966), the Supreme Court set out a framework for applying the statutory language of §103:

> [T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Id.*, at 17-18.

While the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls. If a court, or patent examiner, conducts this analysis and concludes the claimed subject matter was obvious, the claim is invalid or unpatentable under §103. *See KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). To facilitate review this analysis should be made explicit. *KSR* at 1741. It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed invention does. This is so because inventions in most, if not, all cases rely upon building blocks long since uncovered. *KSR* at 1741.

ANALYSIS

We will reverse the obviousness rejections on appeal. We do not believe that the combined teachings of the prior art of Holdsworth and Michelson would have rendered the claimed invention obvious to one of ordinary skill. We agree with the Appellant that Michelson does not show clamping elements at all but is directed to screws that penetrate the members intended to be joined. Thus the staggered position of these fasteners is for a reason quite different from the staggered configuration practiced by Appellant. While known work in one field of endeavor may prompt variations of its use in the same field or a different one, *KSR* at 1740, in this case it would not have been entirely predictable whether the teaching of staggering screws used to penetrate and trap part of the members to be joined would be applicable to staggering screws that are used to clamp on the outside surface of the members to be joined. Predictability is a touchstone of the Supreme Court's analysis in *KSR*. It is our view that the mechanisms of joining the elongated members used in Michelson and Holdsworth are so dissimilar as to obviate any predictability.

We acknowledge the Examiner's argument that he has extracted a general teaching or engineering principle from Michelson having to do with staggered rows of fasteners. However, there is little or no evidence of record to conclude that this specific teaching of Michelson can be reliably or predictably inflated to a general or generic principle. This is particularly true when Michelson expressly teaches a different rationale for crossing screws, i.e., trapping bone tissue between the penetrating screws. Framed in this way, it is our finding that the Examiner has failed to show such a generic principle exists, by a preponderance of the evidence, at least based on the Michelson patent.

The references of Hope and Mochizuki do not ameliorate any of the difficulties we have with the teachings of Holdsworth and Michelson. Accordingly, we are constrained to reverse all rejections on appeal.

ORDER

The rejections of claims 1-5 and 7-12 are reversed. The rejection of claim 6 has been previously withdrawn by the Examiner in the Answer.

REVERSED

JRG

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